AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

- 1. (currently amended) A process for the production of
 a biocompatible crosslinked polydensified monophasic gel,
 comprising the steps of:
- (a) starting a crosslinking reaction of a predetermined quantity of at least one biocompatible polymer in solution by the addition of a quantity of crosslinking agent in a <u>first volume of a reaction mixture</u>, and
- (b) crosslinking said quantity of polymer, followed by the successive steps consisting of:
- (c) adding a supplemental quantity of polymer of a molecular weight higher than 500,000 Da in solution with dilution of the reaction mixture so as to decrease the overall concentration of the polymer in solution a second volume of the reaction mixture, and
- (d) continuing crosslinking in the second volume of the reaction mixture, and
- (e) stopping the crosslinking reaction by elimination of the crosslinking agent, to produce the polydensified monophasic gel.

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- 2. (currently amended) The process according to claim 1, wherein the step of starting a crosslinking reaction is carried out in a pH basic medium.
- 3. (currently amended) The process according to claim 1, wherein the step of starting a crosslinking reaction is carried out in $\frac{1}{2}$ and $\frac{1}{2}$ apply acidic medium.
- 4. (currently amended) The process according to claim 1, wherein a supplemental quantity of crosslinking agent is added prior to step c) during the step of adding a supplemental quantity of polymer.
- 5. (previously presented) The process according to claim 1, wherein the step of stopping the crosslinking reaction is carried out by dialysis.
- 6. (previously presented) The process according to claim 1, wherein the polymers are of natural origin.
- 7. (previously presented) The process according to claim 6, wherein the polymers of natural origin are compounds selected from the group consisting of: hyaluronic acid, chondroitin sulfate, keratan, keratan sulfate, heparin, heparin

sulfate, cellulose and its derivatives, alginates, xanthane, carrageenan, proteins or nucleic acids.

- 8. (previously presented) The process according to claim 6, wherein at least one of the polymers of natural origin is a polymer not naturally present in the human body, selected from the group consisting of: cellulose and its derivatives, alginates, xanthane, carrageenan, and a polymer which is crosslinked with at least one polymer naturally present in the human body selected from the group consisting of: hyaluronic acid, chondroitin sulfate, keratan, keratan sulfate, heparin, heparin sulfate, proteins or nucleic acids.
- 9. (previously presented) The process according to claim 1, wherein the crosslinking agent is a bifunctional or polyfunctional molecule comprising components selected from the group consisting of epoxys, epihalohydrins and divinylsulfone.
- 10. (currently amended) A <u>biocompatible crosslinked</u> polydensified monophasic gel prepared by the process according to claim 1.
- 11. (currently amended) The gel according to claim 10, comprising at least one dispersed active ingredient dispersed therein.

- 12. (previously presented) A method to separate, replace or fill a biological tissue or increase the volume of said tissue or to supplement or replace a biological fluid comprising injecting the gel according to claim 10 in said tissue.
- 13. (previously presented) The process according to claim 2, wherein a supplemental quantity of crosslinking agent is added during the step of adding a supplemental quantity of polymer.
- 14. (previously presented) The process according to claim 3, wherein a supplemental quantity of crosslinking agent is added during the step of adding a supplemental quantity of polymer.
- 15. (previously presented) The process according to claim 2, wherein the step of stopping the crosslinking reaction is carried out by dialysis.
- 16. (previously presented) The process according to claim 3, wherein the step of stopping the crosslinking reaction is carried out by dialysis.

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- 17. (previously presented) The process according to claim 4, wherein the step of stopping crosslinking is carried out by dialysis.
- 18. (previously presented) The process according to claim 2, wherein the polymers are of natural origin.
- 19. (previously presented) The process according to claim 3, wherein the polymers are of natural origin.
- 20. (previously presented) The process according to claim 4, wherein the polymers are of natural origin.
- 21. (new) A process for the production of a biocompatible crosslinked polydensified monophasic gel, consisting of the successive steps of:
- (a) starting a crosslinking reaction of a predetermined quantity of at least one biocompatible polymer in solution by the addition of a quantity of crosslinking agent in a first volume of a reaction mixture, and
 - (b) crosslinking said quantity of polymer,
- (c) adding a supplemental quantity of polymer of a molecular weight higher than 500,000 Da in solution with dilution of the reaction mixture so as to decrease the overall

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concentration of the polymer in a second volume of the reaction mixture.

- (d) continuing crosslinking in the second volume of the reaction mixture, and
- (e) stopping the crosslinking reaction by elimination of the crosslinking agent, to produce the polydensified monophasic gel.
- 22. (new) The process according to claim 1, wherein the supplemental quantity of polymer is added in step c) in an amount of 10% of the predetermined quantity is step a).
- 23. (new) The gel according to claim 10, wherein the degree of crosslinkage varies, and comprising crosslinked hubs interconnected by gel having a quantity of crosslinkage that progressively decreases from that of the hubs.
- 24. (new) The gel according to claim 23, wherein the crosslinked hubs have a quantity of crosslinkage of about 25%, and the quantity of crosslinkage of the gel interconnecting the crosslinked hubs progressively decreases to about 1%.
- 25. (new) A biocompatible crosslinked polydensified monophasic gel prepared by the process according to claim 21.